Paddleboat Dock Renovation

Montgomery Bell State Park
1020 Jackson Hill Road
Burns, TN 37029

- This is a request for bids for a Contract to furnish all material, equipment, supplies and labor to install the following:

DESCRIPTION OF WORK

A. Remove and recycle/dispose off-site of existing wooden dock and fingers.
B. Provide and install seven new 3-foot x 14-foot finger docks.
C. Provide and install seven new 4-foot x 22-foot ADA finger docks.
D. Provide and install one new 4-foot x 14-foot finger docks.

GENERAL

1. The deck and frame structural components of the floating docks and gangways shall be using galvanized steel structure components to meet all loading requirements. The installing contractor shall be a qualified Marine Contractor or General Contractor licensed by the appropriate governing agency.
2. Supply of all products and performance of all work shall be in accordance with applicable American Institute of Steel Construction Specifications or applicable specifications from the American Society of Civil Engineers or other recognized standards. The latest revisions of all standards are applicable.
3. Wood Material: The use of wood on new piers shall be limited to frame banding only. Wood Material - When wood material is used, it shall be designed in accordance with Chapter 25 of The Uniform Building Code, latest edition, as applicable. However, all connections shall be secured with galvanized hardware, steel plates, or metal straps, to resist movement that would otherwise tend to dismantle the structural connections. All wood material in the substructure, must be pressure treated with a non-skin irritating preservative.

4. Steel Material - When steel material is used, it shall be designed to comply with Chapters 27 and 28 of the latest edition of the Uniform Building Code, as applicable, depending on the type of steel used. Welded or bolted connections are optional. New metal on the exposed exterior of the superstructure is desired.

5. Steel Bracing - All columns and stud walls shall be adequately braced to resist wind loads of at least 20 psf. Bracing shall be designed and constructed to counteract design loads. The

structure shall have sufficient flexibility whereby wave actions will not damage the structural system.

6. Design Loads (Minimum)
   A. Deck Loads (substructure): 50 psf

   B. Approach bridges of gangways: 50 psf

   C. Wind loads (substructure): 20 psf

   D. Floatation must be provided under all areas of the substructure covering 25 sq. feet or greater of water surface and must be sufficient to support the minimum design load of the deck, plus the weight of the structure.

TECHNICAL

The following requirements are a minimum and must be met by each dock fabricator in accordance with the requirements of the section entitled **GENERAL.**

1. MATERIALS

1.1. FRAME

1.1.1. Framing, floor joists, and flotation frames shall be constructed using 1 3/4" x 1 3/4" x 3/16" angles, 3" x 3" x ¼" angles, 1" x 1" x 1/8" angle for diagonals and verticals and ½" x 1/8" wall square tubing. Other standard structural steel sections may be approved as well. All bolts and fasteners to be HDW Grade 8 Steel.

1.1.2. Steel used in the construction of the piers must be galvanized or have a patented enamel and/or anodized aluminum finish. If painted, all metal surfaces will be painted a color selected by the State.

1.2. FLOTATION

1.2.1. Flotation to be made of materials fabricated for marine use and be polyethylene encapsulated with a minimum of an 8-year warranty against sinking, becoming waterlogged, cracking, peeling, fragmenting, or losing beads. All floatation material shall resist puncture and penetration and shall not be subject to damage by animals under normal conditions. All floatation material shall be fire resistant. The use of metal drums or non-compartmentalized air containers for encasement is prohibited.

1.2.1.1. Expanded polystyrene flotation with polyethylene casings shall consist of seamless rotationally molded polyethylene casings with an integrated mounting flange minimum 1" thick. Polyethylene shell shall be filled with expanded polystyrene foam with a nominal density of 1 lb/Cu.ft. Nominal wall thickness shall be 0.15". Casings shall contain ultraviolet light inhibitors. Individual flotation modules shall conform to the following requirements: ASTM D1238, D1505, D1693, D746, D648, D638, D790, C303, & C272.

1.2.1.2. Flotation shall be adequate to maintain a stabilized and safe structure capable of supporting design loads. At least 40% of the flotation shall be above the waterline under all conditions.

1.2.1.3. Floatation shall be securely anchored to prevent floating free during major floods or storm events.

1.2.1.4. Flotation required will be determined on the length of the piers or gangways in the water and/or connections on the pier and the shore. The method of anchoring the gangway to the floating structure and the shore shall allow for adequate water level fluctuations and not create a tripping hazard.

1.3. DECKING - The decking surface shall be composed marine grade materials having a textured wood grained surface for added adhesion during dry conditions.

1.3.1. COMPOSITE DECK OPTION - Decking shall be constructed of 5/4" x 6" Moisture Shield Decking w/ 5/16" dia. self-threading screws or approved substitution.

1.3.1.1. The deck shall have an approximate coefficient of friction equal to 0.35 during dry conditions and 0.61 during wet conditions. Simply put, the decking surface is 37% less slick when wet than when dry per ASTM D2394.

1.3.1.2. The deck shall resist a minimum impact of no less that 120-foot pounds (ft-lb) near the center, or at the point where the deck is thinnest, per ASTM D-3029.

1.3.1.3. The deck shall resist a minimum impact of no less than 150-foot pounds (ft-lb) within 16" of the outside of the pier, per ASTM D-3029.

1.4. ACCESSORIES

1.4.1. CLEATS

1.4.1.1. STEEL CLEATS - Cleats shall be constructed of galvanized steel, or non-corroding alloys and shall have a length of 8-1/16" and a height of 1-1/2" and be connected to the pier section with galvanized bolts and nuts. Almag "S" cleats are prohibited. Cleats will be securely bolted to the pier framework with through bolts rather than lag bolts. The cleats will be placed 10' O.C.

1.5. FENDERS

1.5.1. Wood side fenders shall be Southern Pine No. 1 Structural (1200# extreme fiber bending) Stress Grade with a minimum KDAT MCA 4A treatment. All wood shall comply with American Softwood Lumber Standard PS 20-70. Each piece of lumber shall be identified by the grade and treatment mark of recognized organization or independent agency certified by the American Lumber Standards Committee, Washington, DC to grade the species. All lumber specified for treatment shall be treated to the requirements of American Wood Preservers Bureau AWPB LP-22.

1.6. BUMPERS

1.6.1. Bumper strips will be extruded, non-marring, marine grade vinyl and white in color. Each strip will have a minimum height of 3" or 4", 1/8" min. thickness and a minimum width of 1.6 lb/lf. Outside corners will be protected with corner bumpers molded of marine grade vinyl. The bumper strip and corner bumper will be installed with stainless steel screws or aluminum ring shank nails on 6" centers along both flanges.

1.7. HANDRAILS

1.7.1. Handrails on piers, when specified, shall be galvanized steel with minimum 1 ½" NPS. When required, additional grab rails, toe curbs, and fishing rails shall be in accordance with applicable sections of the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.

2. DESIGN

2.1. Frame

2.1.1. For fixed piers and the structural frame design of floating docks, the galvanized steel frame shall be designed to withstand the full calculated dead load of all framing & accessories combined with a live load of 250 pounds per square foot with a 400-pound concentrated point load. Allowable deflection shall be L/180 where "L" in inches is the free span between supports for fixed piers & frames, or the free span between cross members for floating docks.

2.1.2. Flotation: All floating docks shall be designed for a minimum freeboard of 12 inches under full dead plus live load, and 14 inches under a dead load plus concentrated load of 400 pounds applied at any location on the dock walking surface. Additional flotation shall be added to support the gangway dead loads without creating undue distortion in the dock.

2.1.3. Poly float docks shall be designed for a minimum of 30 psf live load providing a minimum of 24" unloaded freeboard.

2.2. Accessories

2.2.1. Cleats shall be designed to withstand a mooring line load of 1500 pounds in any direction.

2.2.2. Handrails shall be a minimum of 42 inches in height above the finished walking surface and shall withstand a uniform horizontal load of 20 pounds per linear foot applied at the top of the rail.

2.2.3. Hinged or bolted floating dock module connectors shall be able to withstand a load of 3000 pounds applied to the full connector.

2.2.4. Anchoring devices for floating docks shall allow free movement of the dock, while minimizing damage due to normal dock movement caused by tides, boat wakes, water fluctuation and seasonal winds. Anchoring devices shall be of sufficient number to restrain a uniform lateral force of 250 pounds per linear foot applied along the entire length of the dock.

2.2.5. Utility lines shall meet all governing construction and fire codes. All electrical lines, junction boxes and accessories shall be installed with the strict adherence to the latest edition of the "National Electrical Code".

2.2.6. Anchoring: Design of these facilities will be submitted for each separate structure and will be developed in accordance with the site taking into consideration the water depth, fluctuation, and exposure to wave and wind loads.

2.2.7. The pier system shall be designed to allow for the use of piling of various sizes, spud pipes, cables, or chains attached to a bottom anchor, or stiff-arm attachments for anchorage. Calculations are to be supplied at State's request to support designed anchorage with the assumption that all collected data is accurate.

3. FABRICATION

3.1. Frame

3.1.1. All steel structural members shall be welded in accordance with the American Welding Society Structural Welding Code D1.1.

3.1.2. Individual dock and pier sections shall be sequentially numbered, matched, and pre-drilled in the shop prior to shipment.

3.2. Flotation:

3.2.1. All flotation shall be fully installed in the shop. Selected floats may be removed to facilitate shipping.

3.2.2. Poly floats shall be through bolted with a minimum of four bolts per float. Screws or lag-screws shall be prohibited.

3.3. Accessories

3.3.1. Composite decking shall be spaced with not more than 3/8-inch air space between the slats. Asymmetric/interlocking decking slats shall be prohibited to prevent water pooling on dock surface. The decking slats shall be placed transversely on the gangway, pier or dock.

3.3.2. Composite decking shall be designed such that the decking shall not have an unsupported length exceeding 24 inches or the manufacturer's recommended span, whichever is less. Decking boards shall be secured by a minimum of one each 5/16" self-tapping screws at each support.

3.3.3. Cleats on docks shall be thru bolted to the frame using steel studs, bolts, and nuts. All cleats shall be installed in locations shown on plans.

3.3.4. Where wood fendering is used the minimum size member shall be 2 x 12, secured at minimum spacing of 4’ on center with 5/16” self-tapping screws countersunk below the wearing surface of the exposed side.

3.3.5. Handrails shall be installed in locations shown in the plans. Handrails shall be secured in place with two 3/8" steel bolts through the extruded handrail pockets welded to the side rail if a detachable type of handrail system is used. Handrails will be welded to the side rails if a truss type system is requested. The type of handrail system shall be the option of the engineer.

3.3.6. Hinge mount extrusions shall be welded to the frame of the dock with a continuous fillet weld unless otherwise shown on the plans. Non-hinged dock module connectors shall be shown on the plans.

3.3.7 Anchoring devices, including pile guides, shall be bolted or welded to the piers and docks in locations and according to the details shown in the plans. Framing shall be braced at pile guides.

4. INSTALLATION

4.1. Docks and piers shall be anchored with pile guides or other anchoring devices bolted to the galvanized steel frame. Floating docks must move freely during the entire cycle of water level extremes with the normal expected wind condition. Utility lines shall be within the dock framing and in a location to avoid damage during normal use. They must be installed to function properly during normal expected water level and weather extremes.

4.2 Gangways shall be securely fastened to the wall or fixed structure as shown on plans. Utilities running on the gangway shall be installed so as not to interfere with the access area of the gangway or to be damaged during normal operation.

4.3. Utility hangars and access panels shall be mounted and located as shown in plans.

4.4. Any potentially corrosive installation of dissimilar metals shall be properly insulated to minimize or eliminate corrosion in a marine environment.

GENERAL CONDITIONS

This is a turnkey job. All aspects of this job will be left in a finished condition: All finish work, interior and exterior walls and trim, finish painting, caulking and final cleanup are included in this contract.

All bidders are advised to visit site to verify all conditions and dimensions. No allowances will be made by the agency due to any bidder neglecting to visit the site and verifying dimensions and conditions.

Contractor will be responsible for determining where all utilities are on the job site and care should be taken to protect the utilities from any damage caused by the demo/construction. This will include any underground utilities around the job site area. If damage occurs, it must be repaired within a 24-hour period from the time damage occurs.

Contractor will perform work on regular time and will invoice work time and material not to exceed the quoted price. Any variance in quote will be addressed with a representative of Facilities Management, Middle TN Regional Office (MTRO) before additional work or materials are supplied.

Work shall be scheduled to avoid any interference with normal operation of the park as much as possible. During the construction period, coordinate construction schedules and operations with the agency. **Work must be conducted during the normal business hours of Monday through Friday, 8:00 a.m. to 4:30 p.m., unless approval for an alternate schedule is arranged with Facilities Management.**

Successful contractor to schedule and attend a pre-construction conference where a pre-construction form will be signed by Facilities Management, Contractor and Park Manager or park representative before work can begin. Contractor must also schedule and attend a final inspection where a final inspection form will be signed by Facilities Management, Contractor and Park Manager or park representative before invoice will be paid.

Project will begin within 15 days of Purchase Order issuance and be complete by 6/1/2022, unless other agreement has been approved by Facilities Management, WTRO.

The contractor will protect areas adjacent to his work and will be required to repair any damage he may cause. Contractor will protect work of other trades. Contractor will correct any painting related damage by cleaning, repairing, or replacing, and refinishing as directed by Facilities Management.

Workmanship is to be warranted for not less than one year from date of final inspection. Materials will be warranted as per manufacturer's warranty.

All materials, equipment, and supplies are to be new and in good condition, UL listed when applicable, and all work accomplished in a manner acceptable to Facilities Management.

Submittals shall be required on all materials and must be presented for approval by the State of Tennessee representative whether it is Architect, Engineer, Designer, Park Manager, Facilities Manager, or Facilities Surveyor. If an Architect or Engineer or Certified, Licensed Designer, then it must contain their State Seal.

Clean up of the project site shall be the responsibility of the contractor. Contractor to assure that job site is clean of nails, debris, etc., at end of each day to ensure safety. Contractor will clean up and haul away all scrap when work is completed to an approved location off state property.

Contractor, employees, or sub-contractors shall be licensed, certified, or registered as required. They must be registered in the State of Tennessee Edison purchasing system.

The contractor shall have a Certificate of Insurance on file with Facilities Management. Contractor will have insurance as will protect the contractor from claims which may arise out of or result from the contractor's operations under the contract and for which the contractor may be held legally liable, whether such operations be by the contractor or by sub-contractor or by anyone directly or indirectly employed by any of them, or anyone associated with them for whose acts they may be liable. Sub-contractors must also be registered in the State of Tennessee Edison purchasing system, be listed on the bid application and must show proof of insurance and have workers compensation. Insurance requirements are listed below.

The State of Tennessee shall not be held liable for any damage, loss of property, or injury of personnel resulting from actions of the contractor and/or his/her sub-contractors or employees.

Contractor shall obtain all fees and permits required for project. Contractor shall have a copy of project specifications, permits and certificate of insurance on project site at all times.

Contractor shall comply with all applicable codes, standards, and regulations in execution of project.

All work must conform to the state's current approved codes, such as the International Building Code. All electrical and plumbing must conform to the latest and most current codes. All Fire Marshall approved projects must have a Certificate of Occupancy issued at the completion of the project. All ADA projects must have approval of the State of Tennessee Facilities Design Coordinator and follow the latest ADA code at the completion of the project.

Invoice shall be submitted for payment within 10 days of project completion. A copy of the invoice shall be submitted to Teresa Bell, Middle Tennessee Regional Office, 2000 Jackson Hill Road, Burns, TN 37029 or Teresa.bell@tn.gov .

For scheduling contact:

Facilities Manager: Don Myatt, 615-218-7697, don.myatt@tn.gov

Facilities Surveyor: Mike Stanfill, 615-238-1230, mike.stanfill@tn.gov

Note: Before the Contract resulting from this ITB is signed, the apparent successful proposer must be registered with the Department of Revenue for the collection of Tennessee sales and use tax. The State shall not approve a contract unless the proposer provides proof of such registration. The foregoing is a mandatory requirement of an award of a contract pursuant to this solicitation.